**Vampire Electronics**

**Background**- Many of our electronics continue to use electricity even when they are in standby mode. For instance, you may have noticed that your television or video games console (Nintendo, PS3, or Xbox) have glowing lights even when you are not using it. This is because it is not completely off and continues to draw power from the electric company. The end effect being that you are increasing your carbon footprint and wasting valuable green on something you are not even using. These standby devices have come to be known as vampire electronics. We want to see the impact of these devices on the middle schools participating in the SMS program. We may even be able to help the public school save some money.  
  
- We will focus mainly on the power wasted by computers and cellphone chargers.  
- To measure electric power, we will the "Kill A Watt”. This device measures the amount of electric power used by plugging a device into it. It measures electric power in Watts.  
  
**Problem Statement**

**Part one: How much energy does your cellphone charger use?**

Materials

Cellphone charger

Kill A Watt

Calculator

Procedures

1. Bring in a cellphone charger from home.
2. Plug into the Kill A Watt device. Measure the power consumption of your chargers in Watts for one minute of being plugged in.
3. Record the number of watts on the data table.
4. Using the calculator, convert Watts to Kilowatts.
5. Convert Kilowatts to Kilowatt hours per month and record on the data table:

Number of Watts \* 60 mins \* 24 hrs \* 30 days = Kilowatt hours (kWhr) per month

1. Calculate the amount of money spent per month to charge the cellphone charger. Record on the data table:

Kilowatt hours (kWhr) per month \* $0.20 = dollars spent a month

1. Calculate the carbon footprint of your cellphone charger and record on the data table:

1.306 lbs CO2 \* Kilowatt hours (kWhr) per month = lbs CO2 per month for your charger

1. Multiply by the number of cellphone chargers in your household for the total carbon footprint of cell phone chargers in your home if they are always plugged in (not including the times when the phone is being charged – that’s extra!).

Data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of device | Watts used in 1 minute | Kilowatt hours per month | $ spent per month on 1 phone charger | Carbon foot print (lbs CO2 per month) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Make a chart comparing the different cellphones and the power used & one comparing the amount of money spent per month.

Next is part 2: computers but I didn’t want to keep going if this is way off base what you were thinking….